09042460

(FILE 'HOME' ENTERED AT 09:51:13 ON 24 AUG 1999)

FILE 'SCISEARCH, MEDLINE, CAPLUS, BIOSIS, CANCERLIT, INPADOC, JAPIO, MEDICONF, AGRICOLA, GENBANK' ENTERED AT 09:51:21 ON 24 AUG 1999

```
L1          7424 S TELOMERASE
L2           655 S L1 AND MOUSE
L3            11 S L2 AND MTERT
L4             4 DUP REM L3 (7 DUPLICATES REMOVED)
L5             3 S MORIN GREGG /AU
               E MORIN GREGG /AU
L6            37 S E4
L7            30 DUP REM L6 (7 DUPLICATES REMOVED)
L8            30 SORT L7 PY
L9            36 S L2 AND VECTOR
L10           19 DUP REM L9 (17 DUPLICATES REMOVED)
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(FILE 'USPAT' ENTERED AT 09:26:33 ON 24 AUG 1999)

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               DEL HIS
L1             7 S MOUSE TELOMERASE
L2            72 S TELOMERASE
L3            47 S L2 AND MOUSE
L4            34 S L3 AND VECTOR
L5            34 SORT L4 PD
               E MORIN GREGG B/IN
L6             0 S E3
L7             0 S MORIN GREGG
               E GREENBERG R?/IN
               E GREENBERG ROGER/IN
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4. 5,583,016, Dec. 10, 1996, Mammalian **telomerase**; Bryant Villeponteau, et al., 435/91.3, 91.1, 91.31, 194, 252.3, 254.11, 320.1, 366, 369; 536/23.1, 23.2, 24.31, 24.33 [IMAGE AVAILABLE]

US PAT NO: 5,583,016 [IMAGE AVAILABLE] L5: 4 of 34
DATE FILED: Oct. 27, 1994

ABSTRACT:
Nucleic acids comprising the RNA component of a mammalian **telomerase** are useful as pharmaceutical, therapeutic, and diagnostic reagents.

8. 5,686,306, Nov. 11, 1997, Methods and reagents for lengthening telomeres; Michael D. West, et al., 435/346, 6, 375; 536/23.1 [IMAGE AVAILABLE]

US PAT NO: 5,686,306 [IMAGE AVAILABLE] L5: 8 of 34
DATE FILED: Nov. 10, 1994

ABSTRACT:
Method and compositions for increasing telomere length in normal cells can be used to increase the proliferative capacity of cells and to delay the onset of cellular senescence.

15. 5,733,730, Mar. 31, 1998, Telomere repeat binding factor and

diagnostic and therapeutic use thereof; Titia De Lange, 435/6, 7.1 [IMAGE AVAILABLE]

US PAT NO: 5,733,730 [IMAGE AVAILABLE] L5: 15 of 34
DATE FILED: Aug. 25, 1995

ABSTRACT:
The present invention relates to a novel nucleotide sequence encoding a telomeric protein which binds a repeat region of telomeric sequences, and to the protein encoded thereby. Also included within the invention are expression **vectors** for the production of the telomeric protein and host cells transformed with the nucleotide sequence. In addition, antibodies, probes and antagonists specific for the telomeric protein are contemplated. Methods of identifying antagonists of the telomeric protein, diagnostic methods of identifying the telomeric protein in a sample, and therapeutic uses of the telomeric protein, particularly in

27. 5,876,979, Mar. 2, 1999, RNA component of **mouse**, rat, Chinese hamster and bovine **telomerase**; William H. Andrews, et al., 435/91.3, 320.1, 325; 536/23.1, 23.2, 24.3, 24.5 [IMAGE AVAILABLE]

US PAT NO: 5,876,979 [IMAGE AVAILABLE] L5: 27 of 34
DATE FILED: Jun. 7, 1995

ABSTRACT:
Nucleic acids comprising the RNA component of a **mouse**, rat, Chinese hamster and bovine **telomerase** are disclosed, as are recombinant expression plasmids comprising said nucleic acids and host cells transformed with said recombinant expression plasmids.

(FILE 'HOME' ENTERED AT 09:51:13 ON 24 AUG 1999)

FILE 'SCISEARCH, MEDLINE, CAPLUS, BIOSIS, CANCERLIT, INPADOC, JAPIO, MEDICONF, AGRICOLA, GENBANK' ENTERED AT 09:51:21 ON 24 AUG 1999
L1 7424 S TELOMERASE
L2 655 S L1 AND MOUSE
L3 11 S L2 AND MTERT
L4 4 DUP REM L3 (7 DUPLICATES REMOVED)

=> d Ti so au ab pi l4 1-4

L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 1999 ACS
TI The ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and the development of agents controlling cell aging and proliferation
SO PCT Int. Appl., 135 pp.
CODEN: PIXXD2
IN Morin, Gregg B.; Allsopp, Richard; Depinho, Ronald; Greenberg, Roger
AB A cDNA for the ***telomerase*** reverse transcriptase of ***mouse*** (***mTERT***) is cloned and used to characterize the enzyme. The enzyme and the cDNA may be of use in developing modulators of ***telomerase*** activity that can be used to control disorders of cell proliferation and to control aging and age-related disease such as cancer. The cDNA was cloned by screening an embryonic stem cell cDNA library with probes derived from the human ***telomerase*** gene. Preliminary clones were found to have high sequence similarity with a human

telomerase cDNA and full-length clones were obtained by RACE.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9927113	A1	19990603	WO 1998-US25211	19981125

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

L4 ANSWER 2 OF 4 SCISEARCH COPYRIGHT 1999 ISI (R) DUPLICATE 1

TI Expression of ***mouse*** ***telomerase*** catalytic subunit in embryos and adult tissues

SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (1 SEP 1998) Vol. 95, No. 18, pp. 10471-10476.
Publisher: NATL ACAD SCIENCES, 2101 CONSTITUTION AVE NW, WASHINGTON, DC 20418.
ISSN: 0027-8424.

AU MartinRivera L; Herrera E; Albar J P; Blasco M A (Reprint)

AB ***Telomerase*** is a ribonucleoprotein complex that elongates telomeres, allowing the stable maintenance of chromosomes during multiple cell divisions. Here, we describe the isolation and characterization of the catalytic subunit of ***mouse*** ***telomerase*** , ***mTERT*** (***mouse*** ***telomerase*** reverse transcriptase), an essential protein component of the ***telomerase*** complex During embryonic development, ***mTERT*** mRNA is abundantly expressed in the whole embryo, especially in regions of intense proliferation, We found that the ***mTERT*** mRNA expression in both embryonic and adult tissues is independent of the essential RNA component of ***telomerase*** , mTR, and therefore, of the formation of active ***telomerase*** complexes, ***mTERT*** protein is present exclusively in tissues with ***telomerase*** activity, such as testis, spleen, and thymus. ***mTERT*** protein is barely detectable in the thymus of mTR(-/-) ***mice*** , suggesting that ***mTERT*** protein stability in this tissue may depend on the actual assembly of active ***telomerase*** complexes. Finally, we found that ***mouse*** and human ***telomerase*** catalytic subunit is located in the cell nucleus, and its localization is not regulated during cell cycle progression.

L4 ANSWER 3 OF 4 SCISEARCH COPYRIGHT 1999 ISI (R) DUPLICATE 2

TI Expression of ***mouse*** ***telomerase*** reverse transcriptase during development, differentiation and proliferation

SO ONCOGENE, (2 APR 1998) Vol. 16, No. 13, pp. 1723-1730.
Publisher: STOCKTON PRESS, HOUNDMILLS, BASINGSTOKE, HAMPSHIRE, ENGLAND RG21 6XS.
ISSN: 0950-9232.

AU Greenberg R A; Allsopp R C; Chin L; Morin G B (Reprint); DePinho R A

AB We have identified the ***mouse*** ***telomerase*** reverse transcriptase component (***mTERT***) and demonstrate both substantial sequence homology to the human ortholog (hTERT), and the presence of reverse transcriptase and ***telomerase*** specific motifs, Furthermore, we show functional interchangeability with hTERT in in vitro ***telomerase*** reconstitution experiments, as ***mTERT*** produces strong ***telomerase*** activity in combination with the human

telomerase RNA component hTR, The ***mouse*** TERT is widely expressed at low levels in adult tissues, with greatest abundance during embryogenesis and in adult thymus and intestine, The ***mTERT*** component mRNA levels were regulated during both differentiation and proliferation, while mTR levels remained constant throughout both processes, Comparison of ***mTERT*** and mTR levels to ***telomerase*** activity indicates that ***mTERT*** expression is more tightly linked to the regulation of ***telomerase*** activity during these processes than is mTR, In contrast to the situation in human cell cultures, ***mTERT*** transcript levels are present at readily detectable levels in primary cultured cells and are not upregulated following crisis, The widespread expression of ***mTERT*** in primary cells and ***mouse*** tissues could explain the increased frequency of spontaneous immortalization of ***mouse*** cells in culture and tumorigenesis in vivo.

L4 ANSWER 4 OF 4 GENBANK.RTM. COPYRIGHT 1999

TITLE (TI): Expression of ***mouse*** ***telomerase*** reverse transcriptase during development, differentiation, and proliferation
TITLE (TI): Direct Submission
JOURNAL (SO): Oncogene (1998) In press
JOURNAL (SO): Submitted (02-MAR-1998) Microbiology and Immunology, Albert Einstein College of Medicine, 1300 Morris Park Ave., Bronx, NY 10461, USA
AUTHOR (AU): Greenberg,R.A.; Allsopp,R.C.; Chin,L.; Morin,G.B.; DePinho,R.A.
AUTHOR (AU): Greenberg,R.A.; Allsopp,R.C.; Chin,L.; Morin,G.B.; DePinho,R.A.

L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 1999 ACS
AN 1999:359668 CAPLUS
DN 131:15717
TI The ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and the development of agents controlling cell aging and proliferation
IN Morin, Gregg B.; Allsopp, Richard; Depinho, Ronald; Greenberg, Roger
PA Geron Corporation, USA; Albert Einstein College of Medicine of Yeshiva University
SO PCT Int. Appl., 135 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-54
ICS C12N009-12; C07K016-40; A01K067-027; C12Q001-48; C12Q001-68
CC 7-2 (Enzymes)
Section cross-reference(s): 3, 13
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9927113	A1	19990603	WO 1998-US25211	19981125

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,

FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1997-979742 19971126
US 1998-42460 19980316

AB A cDNA for the ***telomerase*** reverse transcriptase of ***mouse*** (***mTERT***) is cloned and used to characterize the enzyme. The enzyme and the cDNA may be of use in developing modulators of ***telomerase*** activity that can be used to control disorders of cell proliferation and to control aging and age-related disease such as cancer. The cDNA was cloned by screening an embryonic stem cell cDNA library with probes derived from the human ***telomerase*** gene. Preliminary clones were found to have high sequence similarity with a human ***telomerase*** cDNA and full-length clones were obtained by RACE.

ST ***telomerase*** reverse transcriptase ***mouse*** cDNA cloning; drug screening ***telomerase*** effectors

IT Drug screening
(for modulators of ***telomerase*** activity; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT cDNA sequences
(for ***telomerase*** reverse transcriptase of ***mouse*** ; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT Genes (animal)
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT Protein sequences
(of ***telomerase*** reverse transcriptase of ***mouse*** ; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT Plasmid vectors
(pGRN188, cDNA for ***mouse*** ***telomerase*** reverse transcriptase on; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT Plasmid vectors
(pGRN227, cDNA for ***mouse*** ***telomerase*** reverse transcriptase on; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT Cell aging
Cell proliferation
(screening for effectors of ***telomerase*** for modulation of; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT Antitumor agents
(screening for effectors of ***telomerase*** for use as; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT Antibodies
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(to ***mouse*** ***telomerase*** reverse transcriptase;

mouse ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT 207871-04-3
RL: BPR (Biological process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(amino acid sequence; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT 120178-12-3, ***Telomerase*** reverse transcriptase
RL: BPR (Biological process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

IT 206230-92-4, GenBank AF051911
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; ***mouse*** ***telomerase*** reverse transcriptase and cDNAs encoding it and development of agents controlling cell aging and proliferation)

L8 ANSWER 25 OF 30 CAPLUS COPYRIGHT 1999 ACS
TI Expression of mouse telomerase reverse transcriptase during development, differentiation and proliferation
SO Oncogene (1998), 16(13), 1723-1730
CODEN: ONCNES; ISSN: 0950-9232
AU Greenberg, Roger A.; Allsopp, Richard C.; Chin, Lynda; ***Morin, Gregg*** *** B.*** ; DePinho, Ronald A.
AB We have identified the mouse telomerase reverse transcriptase component (mTERT) and demonstrate both substantial sequence homol. to the human ortholog (hTERT) and the presence of reverse transcriptase and telomerase specific motifs. Furthermore, we show functional interchangeability with hTERT in in vitro telomerase reconstitution expts., as mTERT produces strong telomerase activity in combination with the human telomerase RNA component hTR. The mouse TERT is widely expressed at low levels in adult tissues, with greatest abundance during embryogenesis and in adult thymus and intestine. The mTERT component mRNA levels were regulated during both differentiation and proliferation, while mTR levels remained const. throughout both processes. Comparison of mTERT and mTR levels to telomerase activity indicates that mTERT expression is more tightly linked to the regulation of telomerase activity during these processes than is mTR. In contrast to the situation in human cell cultures, mTERT transcript levels are present at readily detectable levels in primary cultured cells and are not upregulated following crisis. The widespread expression of mTERT in primary cells and mouse tissues could explain the increased frequency of spontaneous immortalization of mouse cells in culture and tumorigenesis in vivo.

L8 ANSWER 1 OF 30 INPADOC COPYRIGHT 1999 EPO
TI TELOMERASE REVERSE TRANSCRIPTASE
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B; ***MORIN GREGG B*** ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI EP 932686 A2 19990804

L8 ANSWER 2 OF 30 INPADOC COPYRIGHT 1999 EPO
TI HUMAN TELOMERASE CATALYTIC SUBUNIT
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;

MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI JP 10234384 A2 19980908

L8 ANSWER 3 OF 30 INPADOC COPYRIGHT 1999 EPO
TI MOUSE TELOMERASE REVERSE TRANSCRIPTASE
INS ***MORIN GREGG B*** ; ALLSOPP RICHARD; DEPINHO RONALD; GREENBERG ROGER
PI WO 9927113 A1 19990603

L8 ANSWER 4 OF 30 INPADOC COPYRIGHT 1999 EPO
TI HUMAN TELOMERASE CATALYTIC SUBUNIT
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI AU 9748073 A1 19980424

L8 ANSWER 5 OF 30 INPADOC COPYRIGHT 1999 EPO
TI TELOMERASE REVERSE TRANSCRIPTASE
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI AU 9748036 A1 19980424

L8 ANSWER 6 OF 30 INPADOC COPYRIGHT 1999 EPO
TI HUMAN TELOMERASE CATALYTIC SUBUNIT
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI WO 9814593 C2 19990514

L8 ANSWER 7 OF 30 INPADOC COPYRIGHT 1999 EPO
TI TELOMERASE REVERSE TRANSCRIPTASE
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI WO 9814592 A2 19980409

L8 ANSWER 8 OF 30 INPADOC COPYRIGHT 1999 EPO
TI HUMAN TELOMERASE KATALYTISK SUBENHET
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI NO 9901588 A 19990531

L8 ANSWER 9 OF 30 INPADOC COPYRIGHT 1999 EPO
TI HTRT, THE REVERSE TRANSCRIPTASE SUBUNIT OF HUMAN TELOMERASE
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI GB 2321642 A1 19980805

L8 ANSWER 10 OF 30 INPADOC COPYRIGHT 1999 EPO
TI COMPOSES D'ACIDES NUCLEIQUES DE PROTEINE ET DE POLYNUCLEOTI DE CODANT POUR LA SOUS-UNITE CATALYTIQUE DE TELOMERASE HUMAI NE, PRODUCTION ET APPLICATIONS
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI FR 2757177 A1 19980619

L8 ANSWER 11 OF 30 INPADOC COPYRIGHT 1999 EPO
TI KATALYTISCHE UNTEREINHEIT MENSCHLICHER TELOMERASE
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B;
MORIN GREGG B ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI DE 19743497 A1 19980820

L8 ANSWER 12 OF 30 INPADOC COPYRIGHT 1999 EPO

TI KATALYTISK UNDERGRUPP AV HUMAN TELOMERAS
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B; ***MORIN GREGG B*** ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI FI 9900655 A0 19990324

L8 ANSWER 13 OF 30 INPADOC COPYRIGHT 1999 EPO
TI HUMAN TELOMERASE CATALYTIC SUBUNIT
INS CECH THOMAS R; LINGNER JOACHIM; NAKAMURA TORU; CHAPMAN KAREN B; ***MORIN GREGG B*** ; HARLEY CALVIN B; ANDREWS WILLIAM H
PI GB 2317891 B2 19980819

L10 ANSWER 2 OF 19 CAPLUS COPYRIGHT 1999 ACS
TI Vertebrate ***telomerases*** and the genes encoding them and their use in the diagnosis and treatment of cancer
SO PCT Int. Appl., 134 pp.
CODEN: PIXXD2
IN Kilian, Andrzej; Bowtell, David
AB A cDNA for the protein subunit of a human ***telomerase*** is cloned and characterized. The gene and gene product may be of use in the diagnosis and treatment of cancer. Methods for identifying inhibitors of ***telomerase*** activity with possible therapeutic use are also described. A cDNA for the enzyme was obtained by sequencing of randomly selected cDNA clones and comparing the resulting protein sequence against that of the ***telomerase*** of the ciliate Euplotes. This partial sequence was extended by repeated rounds of PCR to obtain a full length cDNA. The transcript of the gene appears to undergo alternative splicing. The ***mouse*** ***telomerase*** gene was cloned using the human cDNA as a probe.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9901560	A1	19990114	WO 1998-US13835	19980701
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9882854	A1	19990125	AU 1998-82854	19980701
EP 917579	A1	19990526	EP 1998-933117	19980701
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

L10 ANSWER 4 OF 19 CAPLUS COPYRIGHT 1999 ACS
TI The reverse transcriptase catalytic subunit of a human ***telomerase*** and the gene encoding it
SO PCT Int. Appl., 413 pp.
CODEN: PIXXD2
IN Cech, Thomas R.; Lingner, Joachim; Nakamura, Toru; Chapman, Karen B.; et al.
AB The catalytic subunit, the ***telomerase*** reverse transcriptase, of human ***telomerase*** is characterized and a cDNA encoding it is cloned and characterized. The gene and protein have diagnostic and therapeutic uses, e.g. in the diagnosis and treatment of proliferative disorders.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9814593	A2	19980409	WO 1997-US17885	19971001
	WO 9814593	A3	19990218		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	GB 2317891	A1	19980408	GB 1997-20890	19971001
	GB 2317891	B2	19980819		
	AU 9748073	A1	19980424	AU 1997-48073	19971001
	EP 841396	A1	19980513	EP 1997-307757	19971001
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	FR 2757177	A1	19980619	FR 1997-12217	19971001
	GB 2321642	A1	19980805	GB 1998-4859	19971001
	DE 19743497	A1	19980820	DE 1997-19743497	19971001
	JP 10234384	A2	19980908	JP 1997-286182	19971001
	FI 9900655	A	19990324	FI 1999-655	19990324
	NO 9901588	A	19990531	NO 1999-1588	19990331

L10 ANSWER 10 OF 19 CAPLUS COPYRIGHT 1999 ACS

TI Transgenic animals with altered patterns and levels of expression of ***telomerase*** genes and their use in screening of modulators of ***telomerase*** activity

SO PCT Int. Appl., 57 pp.
CODEN: PIXXD2

IN Greider, Carol; Marhuenda, Maria Antonia Blasco; Depinho, Ronald A.; Lee, Han-Woong

AB Transgenic animals, such as ***mice*** , with altered expression of ***telomerase*** component genes, e.g. knockout ***mice*** , are developed for use in the study of ***telomerase*** function and in the screening of modulators of ***telomerase*** activity. These agents may be used in the treatment of cell proliferation disorders, e.g in treatment of cancer. ***Mice*** heterozygous or homozygous for knockout of the protein or RNA moiety of the ***telomerase*** are described. Similarly, ***mice*** with increased copy no. of one of the genes or carrying a gene that raises or lowers the level of expression of the ***telomerase*** genes can be constructed. The development of a targetting ***vector*** that inactivates the ***telomerase*** RNA gene is described. This plasmid was used to transform ***mouse*** embryonic stem cells that were used to developed chimeric ***mice*** from which homozygous lines were developed. Methods of using these animals in the study of the role of ***telomerase*** activity in tumor development and progression are discussed.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9735967	A2	19971002	WO 1997-US5070	19970321
	WO 9735967	A3	19971211		
	W: AU, CA, CN, JP, KR, MX				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9725936	A1	19971017	AU 1997-25936	19970321

Oncogene 1998 Apr 2;16(13):1723-30

Expression of mouse telomerase reverse transcriptase during development, differentiation and proliferation.

Greenberg RA, Allsopp RC, Chin L, Morin GB, DePinho RA

Department of Microbiology and Immunology, Albert Einstein College of Medicine, Bronx, New York 10461, USA.

We have identified the mouse telomerase reverse transcriptase component (mTERT) and demonstrate both substantial sequence homology to the human ortholog (hTERT), and the presence of reverse transcriptase and telomerase specific motifs. Furthermore, we show functional interchangeability with hTERT in in vitro telomerase reconstitution experiments, as mTERT produces strong telomerase activity in combination with the human telomerase RNA component hTR. The mouse TERT is widely expressed at low levels in adult tissues, with greatest abundance during embryogenesis and in adult thymus and intestine. The mTERT component mRNA levels were regulated during both differentiation and proliferation, while mTR levels remained constant throughout both processes. Comparison of mTERT and mTR levels to telomerase activity indicates that mTERT expression is more tightly linked to the regulation of telomerase activity during these processes than is mTR. In contrast to the situation in human cell cultures, mTERT transcript levels are present at readily detectable levels in primary cultured cells and are not upregulated following crisis. The widespread expression of mTERT in primary cells and mouse tissues could explain the increased frequency of spontaneous immortalization of mouse cells in culture and tumorigenesis in vivo.

PMID: 9582020, UI: 98241176

Hum Mol Genet 1997 Nov;6(12):1999-2004

Mammalian telomerase: catalytic subunit and knockout mice.

Kipling D

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For the second time this year random cDNA sequencing, in combination with data from unicellular eukaryotes, has made a significant contribution to the analysis of human telomerase. Two groups have reported mammalian homologues of the Tetrahymena p80 telomerase-associated protein, in both cases the key breakthrough being mammalian cDNA clones with database matches to Tetrahymena p80. This has now been joined by the sequence of a candidate for the human telomerase catalytic subunit. The discovery that its message abundance closely follows telomerase activity could make a major impact on the utility of telomerase as a diagnostic marker for human malignancy. In addition, Blasco et al . report the phenotype of a transgenic mouse deleted for the mTR gene, which encodes the essential RNA component of telomerase. Interestingly tumour formation is unaffected in these mice, strengthening the argument that telomerase expression in mouse tumourigenesis is an innocent bystander rather than a necessary event. However, fundamental differences between the genomic organisation of mouse and human telomeres mean that the mouse is not a straightforward model to critically test the role of telomere loss and telomerase in human malignancy.

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☐ Holt SE, et al. [See Related Articles]
Functional requirement of p23 and Hsp90 in telomerase complexes.
Genes Dev. 1999 Apr 1;13(7):817-26.
PMID: 10197982; UI: 99214053.

☐ Greenberg RA, et al. [See Related Articles]
Telomerase reverse transcriptase gene is a direct target of c-Myc but is not functionally equivalent in cellular transformation.
Oncogene. 1999 Feb 4;18(5):1219-26.
PMID: 10022128; UI: 99144726.

☐ Greenberg RA, et al. [See Related Articles]
Expression of mouse telomerase reverse transcriptase during development, differentiation and proliferation.

Oncogene. 1998 Apr 2;16(13):1723-30.
PMID: 9582020; UI: 98241176.

☐ Bodnar AG, et al.
Extension of life-span by introduction of telomerase into normal human cells.
Science. 1998 Jan 16;279(5349):349-52.
PMID: 9454332; UI: 98113956.

☐ Weinrich SL, et al. [See Related Articles]
Reconstitution of human telomerase with the template RNA component hTR and the catalytic protein subunit hTRT.
Nat Genet. 1997 Dec;17(4):498-502.
PMID: 9398860; UI: 98061107.

☐ Morin GB. [See Related Articles]
Telomere control of replicative lifespan.
Exp Gerontol. 1997 Jul-Oct;32(4-5):375-82. Review.
PMID: 9315442; UI: 97461075.

☐ Nakamura TM, et al. [See Related Articles]
Telomerase catalytic subunit homologs from fission yeast and human.
Science. 1997 Aug 15;277(5328):955-9.
PMID: 9252327; UI: 97400623.

☐ Morin GB. [See Related Articles]
The implications of telomerase biochemistry for human disease.
Eur J Cancer. 1997 Apr;33(5):750-60. Review.
PMID: 9282113; UI: 97426993.

☐ Morin GB. [See Related Articles]
Telomere integrity and cancer.
J Natl Cancer Inst. 1996 Aug 21;88(16):1095-6. No abstract available.
PMID: 8757183; UI: 96347980.

☐ Morin GB. [See Related Articles]
Is telomerase a universal cancer target?
J Natl Cancer Inst. 1995 Jun 21;87(12):859-61. No abstract available.
PMID: 7666470; UI: 95395897.

☐ Morin GB. [See Related Articles]
Recognition of a chromosome truncation site associated with alpha-thalassaemia by human telomerase.
Nature. 1991 Oct 3;353(6343):454-6.
PMID: 1896089; UI: 91375565.

☐ Morin GB. [See Related Articles]
The human telomere terminal transferase enzyme is a ribonucleoprotein that synthesizes TTAGGG repeats.

Cell. 1989 Nov 3;59(3):521-9.
PMID: 2805070; UI: 90030424.

☐ Yarus M, et al. [See Related Articles]
A Tetrahymena intron nucleotide connected to the GTP/arginine site.
Nucleic Acids Res. 1989 Sep 12;17(17):6969-81.
PMID: 2674904; UI: 89386051.

☐ Morin GB, et al. [See Related Articles]
Telomeric repeats of Tetrahymena malaccensis mitochondrial DNA: a multimodal distribution that fluctuates erratically during growth.
Mol Cell Biol. 1988 Oct;8(10):4450-8.
PMID: 3185556; UI: 89039874.

☐ Morin GB, et al. [See Related Articles]
Mitochondrial telomeres: surprising diversity of repeated telomeric DNA sequences among six species of Tetrahymena.
Cell. 1988 Feb 12;52(3):367-74.
PMID: 3125982; UI: 88151041.

☐ Morin GB, et al. [See Related Articles]
Phylogenetic relationships and altered genome structures among Tetrahymena mitochondrial DNAs.
Nucleic Acids Res. 1988 Jan 11;16(1):327-46.
PMID: 2829120; UI: 88124205.

☐ Morin GB, et al. [See Related Articles]
The telomeres of the linear mitochondrial DNA of Tetrahymena thermophila consist of 53 bp tandem repeats.
Cell. 1986 Sep 12;46(6):873-83.
PMID: 3019555; UI: 87002455.